

Appl. No. 10/766,536
Reply to Office Action of December, 2005

AMENDMENTS TO THE CLAIMS

Claims 1-16 and 23-38 are pending in the present application. Claims 1, 3, 4, 12, 15, 23, 25, 26, 34 and 37 have been amended. Claims 2, 13, 14, 24, 35 and 36 are cancelled. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method of bonding integrated circuit chips and other devices to a liquid crystal display panel, the method comprising the steps of:

applying an anisotropic conductive film to a region of the liquid crystal display panel, the film sized to bond a first integrated circuit chip and an other device to the panel;

placing one of the first integrated circuit chip and the other device on a first area portion of the film;

compressing the one of the first integrated circuit chip and the other device together with the panel;

placing the other one of the first integrated circuit chip and the other device on a second area portion of the film; and

compressing the other one of the first integrated circuit chip and the other device together with the panel, wherein the first integrated circuit chip is electrically connected with the other device through the anisotropic conductive film extending continuously from the first integrated circuit chip to the other device.

2. (Cancelled)

3. (Currently amended) The method according to claim 21, further comprising the step of curing the film.

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4. (Currently amended) The method according to claim 1, wherein ~~the placing step further includes placing the other one of the first integrated circuit chip and the other device on a second area portion of the film and the compressing step further includes compressing the other one of the first integrated circuit chip and the other device is compressed together with the panel at the same time the one of the first integrated chip and the other device is compressed with the panel.~~
5. (Original) The method according to claim 4, further comprising the step of curing the film.
6. (Original) The method according to claim 1, wherein the region of the panel comprises a peripheral region.
7. (Original) The method according to claim 1, wherein the first integrated circuit chip comprises a first driver integrated circuit chip.
8. (Original) The method according to claim 3, wherein the curing step includes heating the anisotropic conductive film to a predetermined temperature.
9. (Original) The method according to claim 5, wherein the curing step includes heating the anisotropic conductive film to a predetermined temperature.

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10. (Original) The method according to claim 1, wherein the anisotropic conductive film is spaced from an edge of the panel.

11. (Original) The method according to claim 1, wherein the anisotropic conductive film extends beyond an edge of the panel.

12. (Currently amended) The method according to claim 1, wherein the anisotropic conductive film is sized to bond the first integrated circuit chip, a second integrated circuit chip and the other device to the panel, ~~the placing step includes placing one of the first integrated circuit chip, the second integrated chip and the other device is placed~~ on the first area portion of the film, and ~~the compressing step includes compressing the one of the first integrated chip, the second integrated chip and the other device is compressed~~ together with the panel.

13. (Cancelled)

14. (Cancelled)

15. (Currently amended) The method according to claim 12, wherein ~~the placing step further includes placing the remaining ones of the first integrated circuit chip, the second integrated circuit chip, and the other device on second and third area portions of the film and the compressing step further includes compressing the remaining ones of the first integrated circuit chip, the second integrated circuit chip is compressed and the other device together with the~~

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panel at the same time ~~the one of the first integrated circuit chip, the second integrated circuit chip and the other device is~~ are compressed with the panel.

16. (Original) The method according to claim 1, wherein the other device is selected from the group consisting of a flexible printed circuit board, a tape carrier package, and a chip-on-film.

17. (Withdrawn) A liquid crystal display device comprising:

a panel;

a thin film transistor array disposed on a first region of the panel;

a first integrated circuit chip;

a device selected from the group consisting of a flexible printed circuit board, a tape carrier package, and a chip-on-film; and

an anisotropic conductive film bonding the first integrated circuit chip and the device to the second region of the panel.

18. (Withdrawn) The liquid crystal display device according to claim 17, wherein the second region of the panel comprises a peripheral region.

19. (Withdrawn) The liquid crystal display device according to claim 17, wherein the first integrated circuit chip comprises a first driver integrated circuit chip.

20. (Withdrawn) The liquid crystal display device according to claim 17, wherein the anisotropic conductive film is spaced from an edge of the panel.

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21. (Withdrawn) The liquid crystal display device according to claim 17, wherein the anisotropic conductive film extends beyond an edge of the panel.
22. (Withdrawn) The liquid crystal display device according to claim 17, further comprising a second integrated circuit chip, the anisotropic conductive film bonding the first and second integrated circuit chips and the device to the second region of the panel.
23. (Currently amended) A method of manufacturing a liquid crystal display device, the method comprising the steps of:
- forming a thin film transistor array on a first region of a liquid crystal display panel;
- applying an anisotropic conductive film to a second region of the panel, the film sized to bond a first integrated circuit chip and an other device to the second region of the panel;
- placing one of the first integrated circuit chip and the other device on a first area portion of the film;
- compressing the one of the first integrated circuit chip and the other device together with the panel;
- placing the other one of the first integrated circuit chip and the other device on a second area portion of the film; and
- compressing the other one of the first integrated circuit chip and the other device together with the panel, wherein the first integrated circuit chip is electrically connected with the other device through the anisotropic conductive film extending continuously from the first integrated circuit chip to the other device.

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24. (Cancelled)
25. (Currently amended) The method according to claim 2423, further comprising the step of curing the film.
26. (Currently amended) The method according to claim 23, wherein the placing step further includes placing the other one of the first integrated circuit chip and the other device on a second area portion of the film and the compressing step further includes compressing the other one of the first integrated circuit chip and the other device is compressed together with the panel at the same time the one of the first integrated chip and the other device is compressed with the panel.
27. (Original) The method according to claim 26, further comprising the step of curing the film.
28. (Original) The method according to claim 26, wherein the first region of the panel comprises a pixel region and the second region of the panel comprises a peripheral region.
29. (Original) The method according to claim 23, wherein the first integrated circuit chip comprises a first driver integrated circuit chip.
30. (Original) The method according to claim 25, wherein the curing step includes heating the anisotropic conductive film to a predetermined temperature.

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31. (Original) The method according to claim 27, wherein the curing step includes heating the anisotropic conductive film to a predetermined temperature.
32. (Original) The method according to claim 23, wherein the anisotropic conductive film is spaced from an edge of the panel.
33. (Original) The method according to claim 23, wherein the anisotropic conductive film extends beyond an edge of the panel.
34. (Currently amended) The method according to claim 23, wherein the anisotropic conductive film is sized to bond the first integrated circuit chip, a second integrated circuit chip and the other device to the panel, ~~the placing step includes placing one of the first integrated circuit chip, the second integrated chip and the other device is placed~~ on the first area portion of the film, and ~~the compressing step includes compressing the one of the first integrated chip, the second integrated chip and the other device is compressed~~ together with the panel.
35. (Cancelled)
36. (Cancelled)
37. (Currently amended) The method according to claim 34, wherein ~~the placing step further includes placing the remaining ones of the first integrated circuit chip, the second integrated~~

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~~circuit chip, and the other device on second and third area portions of the film and the compressing step further includes compressing the remaining ones of the first integrated circuit chip, the second integrated circuit chip and the other device is compressed together with the panel at the same time the one of the first integrated circuit chip, the second integrated circuit chip and the other device is are compressed with the panel.~~

38. (Original) The method according to claim 23, wherein the other device is selected from the group consisting of a flexible printed circuit board, a tape carrier package, and a chip-on-film.